

ON THE MOLLUSCA PROCURED DURING THE "PORCUPINE"
EXPEDITIONS, 1869-1870. SUPPLEMENTAL NOTES, PART I.

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PLATE III.

It will be a familiar fact to students of the Mollusca that Dr. Gwyn Jeffreys passed away, in 1885, ere the completion of his work on the "Porcupine" Mollusca, and that part ix was seen through the press by Mr. E. A. Smith.

In the present paper I commence a supplement to his work, and dealing firstly with the genera which he did not consider, I propose subsequently to endeavour to give additional details relative to the residue of the Mollusca. When Jeffreys commenced his work much of the material was unsorted, and therefore there remains a good deal of information to be given.

The dredgings were divided by Jeffreys between himself and Mr. J. T. Marshall; at Jeffreys' death a large portion of this part of his collection was acquired by the British Museum, together with all his manuscript notes relating to it, and recently Mr. Marshall's collection, worked out with the most painstaking care, has passed into my hands. Mr. Marshall has most generously presented me with his interleaved copy of the "Porcupine" reports, and a quantity of valuable notes made by him with a view to a supplement being written, and Mr. Smith has placed Jeffreys' manuscripts at my disposal. My task, therefore, is rather that of an editor than of the writer of an original work, and while I take full responsibility for all statements herein contained, it must be borne in mind that the more valuable portions of the work are due to those by whose labours I have profited. Where possible, I have endeavoured to acknowledge in the text on whose authority the statements are made.

Some difficulty has arisen in chronicling the Museum collection owing to the fact that at Jeffreys' death his material was not fully prepared for detailed labelling. Much information no doubt remained unwritten, and he appears to have been in the practice, probably for his own convenience, of recording on the boxes, not only the station from which the specimens came, but also other localities where the species was found. In the case of one of the Bullidæ, for example, a box containing one specimen bears three station numbers. I have endeavoured rather to err on the side of omission than to give stations as to which I feel any doubt.

I have not attempted to give a very full synonymy, but have referred rather to monographs, etc., where this may be found. In addition to the shells now catalogued, there are a few species which I regard as being, in view of the fact that they are either broken or in very bad condition, for the present indeterminable. Specimens in

similar condition have been described from other scientific expeditions, but in my opinion no real gain is achieved by giving names to such material.

It must be assumed that, where molluscs are not recorded as 'live' in the following pages, only dead specimens were taken. Occasionally it has been doubtful whether the shells were really 'live' or only fresh dead specimens, and in such cases I have recorded them as dead shells.

Nine parts of the "Report" were written by Jeffreys, namely:—

Part	I. Brachiopoda.	P.Z.S., 1878, pp. 393-416, pls. xxii, xxiii.
,,	II. Peleceypoda.	,, 1879, pp. 553-588, pls. xlv, xlvi.
,,	III. ,,	,, 1881, pp. 693-724, pl. lxi.
,,	IV. ,,	,, 1881, pp. 922-952, pls. lxx, lxxi.
,,	V. Scaphopoda and Gastropoda.	,, 1882, pp. 656-687, pls. xlix, l.
,,	VI. Gastropoda.	,, 1883, pp. 88-115, pls. xix, xx.
,,	VII. ,,	,, 1884, pp. 111-149, pls. ix, x.
,,	VIII. ,,	,, 1884, pp. 341-372, pls. xxvi-xxviii.
,,	IX. ,,	,, 1885, pp. 27-63, pls. iv-vi.

In the first place, it becomes necessary to correct a few of the details as to stations, etc., given by Jeffreys (P.Z.S., 1878, pp. 394-397), the following notes being due to Mr. Marshall. In the cruise of 1869, Station 1 was really at $51^{\circ} 51' N.$ and $11^{\circ} 50' W.$, and the depth was 370 fathoms. In the cruise of 1870, the depths of Stations 17 and 17a should be 600-1095 and 740 fathoms respectively. In Mr. Marshall's view "Tangiers Bay, 35 fathoms" was an accidental substitution for "Station 35, 335 fathoms"; it appears duly, however, with a list of some shells obtained there, in Jeffreys' notebook, while under the deep-water locality Jeffreys records that the bottom was "clayey mud," and that there was "no dredging." It is only right, however, to warn students that though the locality is herein quoted as "Tangiers Bay, 35 fathoms," there is some little uncertainty on the point. In the second cruise in the Mediterranean, Station 53, Algerine Coast, 112 fathoms, was omitted. Further, Mr. Marshall writes: "Dr. Gwyn Jeffreys has substituted, by error, Station 55 for Station 56 throughout his papers on the Poreupine Expedition, and the differences between the two are most material. Station 55 was off the coast of Algiers in 1456 fathoms, whence the dredge came up loaded with 'barren mud,'¹ while Station 56 was close to the Island of Pantellaria, in 390 fathoms, and was a most successful haul as regards Mollusca. All the dredgings passed through my hands, and there were no bags labelled 'St. 55.' This is important,

¹ Proc. Roy. Soc., No. 125 (1870), p. 174.

as the Marquis de Monterosato and other authors have recorded numerous species from the greater depth of 1456 fathoms that can only claim to come from 390 fathoms, and from a different part of the Mediterranean. This particular dredging was carried out under Dr. Carpenter's charge and was very rich in Mollusca. Gwyn Jeffreys used the term 'Station 55' readily enough in his preliminary report,¹ and I cannot imagine how he came to change the number in writing his detailed report ten years later."

For completeness the stations and localities are here reprinted from Jeffreys' paper, one or two emendations and corrections being made.

EXPEDITION OF 1869.

Number of Station.	North Latitude.	West Longitude.	Depth in Fathoms.	Bottom Temperature.
1	51° 51'	11° 50'	370	49°·0 Fahr.
	Dingle Bay		30-40	
2	51° 22'	12° 25'	808	41°·4
3	51° 38'	12° 50'	370-722	43°·0
4	51° 56'	13° 39'	251-539	49°·5
5	52° 7'	12° 52'	364	48°·8
6	52° 25'	11° 40'	90	50°·0
7	52° 14'	11° 48'	159	50°·4
8	53° 15'	11° 51'	106	51°·2
9	53° 16'	12° 42'	165	49°·7
10	53° 23'	13° 29'	85	49°·5
	Galway Bay		15-20	
13	53° 42'	13° 55'	208	49°·6
14	53° 49'	13° 15'	173	49°·6
15	54° 5'	12° 17'	422	47°·0
16	54° 19'	11° 50'	816	39°·5
17	54° 28'	11° 44'	1230	37°·8
18	54° 15'	11° 9'	183	49°·4
	Donegal Bay		25-40	
19	54° 53'	10° 56'	1360	37°·4
20	55° 11'	11° 31'	1443	37°·0
21	55° 40'	12° 46'	1476	36°·9
22	56° 8'	13° 34'	1263	37°·3
23	56° 7'	14° 19'	630	43°·5
23a	56° 13'	14° 18'	420	46°·4
24	56° 26'	14° 28'	109	46°·4
25	56° 41'	13° 39'	164	46°·5
	Rockall Bank		54	48°·3
28	56° 44'	12° 52'	1215	37°·1
30	56° 24'	11° 49'	1380	37°·1
31	56° 15'	11° 25'	1360	37°·2
	Lough Swilly		3-13	
	Lough Foyle		10	
	North Channel		40	
33	50° 38'	9° 27'	74	49°·6
34	49° 51'	10° 12'	75	49°·6
35	49° 7'	10° 57'	96	51°·3
36	48° 50'	11° 9'	725	43°·9
37	47° 38'	12° 8'	2435	36°·5
38	47° 39'	11° 33'	2090	36°·3
39	49° 1'	11° 56'	557	47°·0

¹ Rep. Brit. Assoc., 1873, p. 113.

Number of Station.	North Latitude.	West Longitude.	Depth in Fathoms.	Bottom Temperature.
40	49° 1'	12° 5'	517	47°·7 Fahr.
41	49° 4'	12° 22'	584	46°·5
42	49° 12'	12° 52'	862	39°·7
43	50° 1'	12° 26'	1207	37°·7
44	50° 20'	11° 34'	865	39°·4
45	51° 1'	11° 21'	458	48°·1
45 ^a			180	
45 ^b			113	
47	59° 34'	7° 18'	542	43°·8
51	60° 6'	8° 14'	440	42°·0
52	60° 25'	8° 10'	384	30°·6
55	60° 4'	6° 19'	605	29°·8
56	60° 2'	6° 11'	480	30°·7
57	60° 14'	6° 17'	632	30°·5
58	60° 21'	6° 51'	540	30°·8
60	61° 3'	5° 58'	167	44°·3
61	62° 1'	5° 19'	114	45°·0
62	61° 59'	4° 38'	125	44°·6
64	61° 21'	3° 44'	640	30°·0
65	61° 10'	2° 21'	345	30°·0
East Longitude.				
68	60° 23'	0° 33'	75	44°·0
69	60° 1'	0° 18'	67	43°·8
70	60° 4'	0° 21'	66	45°·1
89	59° 38'	7° 46'	445	45°·5
90	59° 41'	7° 34'	458	45°·2
	The Minch.		60-80	
	Little Minch.		45-50	
	Near Belfast.		70	
	Loch Torridon.		40	
	Off Lerwick.		10-66	

EXPEDITION OF 1870.

1	48° 38'	10° 15'	567	
2	48° 37'	10° 9'	305	48°·5 Fahr.
3	48° 31'	10° 3'	690	
3 ^a			500	
6	48° 26'	9° 44'	358	50°·3
8	48° 13'	9° 11'	257	50°·0
9	48° 6'	9° 18'	539	48°·0
10	42° 44'	9° 23'	81	53°·5
11	42° 32'	9° 24'	332	51°·5
12	42° 20'	9° 17'	128-232	52°·5
	Vigo Bay.		20	
	Off Cape Mondego.		100-380	
13	40° 16'	9° 37'	220	52°·0
14	40° 6'	9° 44'	469	51°·5
16	39° 55'	9° 56'	994	40°·3
17	39° 42'	9° 43'	600-1095	39°·7
17 ^a	39° 39'	9° 39'	740	49°·3
17 ^b			785	
19	39° 27'	9° 39'	248	51°·7
	Setubal Bay.		64	
	Off Cape Espichel.		740	
22	38° 15'	9° 33'	718	52°·0
24	37° 19'	9° 13'	292	52°·7
25	37° 11'	9° 7'	374	53°·5
	Off Cape Sagres.		45-58	

Number of Station.	North Latitude.	West Longitude.	Depth in Fathoms.	Bottom Temperature.
26	36° 44'	8° 8'	364	52°·7 Fahr.
27	36° 37'	7° 33'	322	51°·3
28	36° 29'	7° 16'	304	53°·3
28 _a			286	
29	36° 20'	6° 47'	227	55°·0
30	36° 15'	6° 52'	386	52°·7
31	35° 56'	7° 6'	477	50°·5
32	35° 41'	7° 8'	651	50°·0
33	35° 33'	6° 54'	554	49°·7
34	35° 44'	6° 53'	414	50°·0
36	35° 35'	6° 26'	72-128	55°·0
	Tangier Bay.		35	
	Gibraltar Bay.		3	
	Algeiras Bay.		1-15	
40	36° 0'	4° 40'	586	55°·0
41	35° 57'	4° 12'	730	55°·0
45	35° 36'	2° 29'	207	54°·7
	Capo de Gata.		40-69	
	Cartagena Bay.		60-84	
50	{ Algerine		{ 5-51	
50 _a	{ Coast.		{ 152	
	Off Jijeli.		40-84	
		East Longitude.		
51	36° 55'	1° 10'	1415	54°·7
53	36° 53'	5° 55'	112	55°·5
54	37° 41'	6° 27'	1508	55°·0
56	37° 3'	11° 36'	390	56°·5
	Gulf of Bona.		25	
	Benzert Road.		40-65	
	Rasel Amoush.		45	
	Gulf of Tunis.		25-85	
	Adventure Bank.		30-92	
	Off Rinaldo's Chair.		60-160	
58	36° 43'	13° 36'	266	56°·5

CEPHALOPODA.

The Cephalopods were dealt with and described by Dr. W. E. Hoyle in the "Challenger" Report, where full references may be found. For completeness I have extracted from that work and from some notes by Dr. Hoyle the following bare list of names and localities:—

OCTOPUS ARCTICUS, Prosch.

"Porcupine" Expedition, 1869, Stations 57, 65.

SEPIOLA RONDELETI, Leach.

"Porcupine" Expedition, 1869, The Minch, 60-80 fathoms.

ROSSIA MACROSOMA (delle Chiaje).

"Porcupine" Expedition, 1869, The Minch, 60-80 fathoms.

ROSSIA GLAUCOPIS, Lovén.

"Porcupine" Expedition, 1869, Station 65.

TAONIUS HYPERBOREUS, Steenstrup.

"Porcupine" Expedition, 1869, 140 miles north-west of the Irish coast, July 2, 1869: lat. 56° 10' N., long. 13° 16' W., surface.

GASTROPODA.

OTINA, Gray.

Otina, Gray: Proc. Zool. Soc., 1847, p. 156 (type *O. otis*).

Though I am using this familiar generic name, it may be noted that there is a serious question whether it should not be superseded by *Galericulum* of Brown, and a discussion of this point leads one also to consider *Velutina* of Fleming. *Velutina* was proposed by Fleming (Edinb. Enyel., vol. xiv, p. 626)¹ for "the *Bulla velutina* of Müller," which has been usually accepted as a synonym of the *Helix lævigata*, Linn., though some slight doubt has been thrown on the identification by Hanley (Ipsa Linn. Conch., p. 388). In 1828 Fleming ("British Animals," p. 326) placed in the genus *Helix lævigata*, L., *Helix otis*, Turton, and *Phasianella stylifera*, Turton, which latter he suggested might form a new genus, *Stylina*. Meanwhile, in 1827, Brown (Ill. Conch. Gt. Brit., expl. pl. xxxviii) proposed the genus *Galericulum* for *Helix lævigata* and *G. ovatum*, n.sp., the latter equalling the *Helix otis* of Turton (1819). It therefore becomes an interesting point whether, one of Brown's species being the type of the prior *Velutina*, the name *Galericulum* should not be used for *Helix otis*, in preference to the later *Otina*, which, as pointed out by Forbes & Hanley (Brit. Moll., vol. iii, p. 320), was proposed by Gray, in his "List of Genera," in an unsatisfactory manner.

OTINA OTIS (Turton).

Helix otis, Turton: Conch. Dict., 1819, p. 70.

"Poreupine" Expedition, 1870, Gibraltar.

Distribution.—English, Belgian, and French coasts, and in the Mediterranean.

SIPHONARIA, Sowerby.

SIPHONARIA ALGESIRÆ, Quoy.

"Poreupine" Expedition, 1870, Cadiz.

ACTEON, Montfort.

Acteon, Montfort: Conch. Syst., vol. ii, p. 314 (type *Bulla tornatilis*, L.).

I have left one broken shell from the cruise of 1870, Station 17, unrecorded.

ACTEON AZORICUS, Locard.

Actæon Azoricus, Locard: Expéd. Scient. Trav. Talisman, vol. i (1897), p. 85, pl. iii, figs. 8-11.

Actæon ovatus, Jeffreys: Ann. Nat. Hist., ser. v, vol. vi, p. 318 [nom. nud.]; Rep. Brit. Assoc., 1880, p. 387 [nom. nud.].

"Poreupine" Expedition, 1870, Station 16.

Distribution.—Azores, 1258 metres (Locard).

¹ Probably "about 1825 to 1828" (B. B. Woodward).

Three specimens, now in the British Museum, and identified by Jeffreys as his *A. ovatus*, are referred here; I have, however, not seen an authentic specimen of *A. Azoricus*. Mons. Locard refers *A. ovatus* to *A. Monterosatoi*, but, judging from specimens of the latter species identified by the Marquis de Monterosato, they are quite distinct.

ACTEON EXILIS, Jeffreys.

Actæon exilis, Jeffreys: Ann. Nat. Hist., ser. iv, vol. vi, p. 85 (1870); ser. iv, vol. xix, p. 335 (1877); Rep. Brit. Assoc., 1880, p. 387; Dautzenberg, Camp. Scient. Albert Ier, fasc. i, p. 20, pl. i, fig. 1; Jordan, Proc. Malac. Soc., vol. i, p. 267, pl. xvi, fig. 8.

"Porcupine" Expedition, 1869, Stations 28, 42; 1870, Stations 3, 16, 17, 17a, 28, 28a, 29, 50, 53, 56, Adventure Bank in 92 fathoms.

Distribution.—Apparently widely scattered over the Atlantic and Mediterranean in deep water; for details see Pilsbry (Man. Conch., vol. xv, p. 156) and Locard (Expéd. Scient. Trav. Talisman, vol. i, pp. 80-82). Fossil in Pliocene of Sicily and Calabria, also Red Crag (J. G. J.).

In the Report of the "Valorous Expedition," Jeffreys cites "Channel slope and Bay of Biscay, 227-994 fath." of the "Porcupine" Expedition, but the former depth was at Station 29, off the Spanish coast, and the latter at Station 16, off the Portuguese coast (J. T. Marshall). The specimens from Stations 17, 17a are shorter, broader, thinner, and smoother than usual.

Amongst Jeffreys' notes occurs the following description of the animal: "Body whitish, with a faint tinge of brownish-yellow. Snout broad, cloven in front and even with the foot in that part. Tentacles broad, triangular. Eyes, none perceptible in three specimens examined. Foot large and fleshy (like that of *Stylifer*), broad in front, and bilobed behind."

ACTEON GLOBULINUS (Forbes). Pl. III, Fig. 2.

Tornatella globulina, Forbes: Rep. Brit. Assoc., 1843 (1844), p. 191.

Actæon globulinus, Forbes: Jeffreys, Rep. Brit. Assoc., 1873, p. 113.

Actæon pusillus, Forbes, juv.: Jeffreys, Ann. Nat. Hist., ser. iv, vol. vi, p. 85.

"Porcupine" Expedition, 1870, Adventure Bank in 92 fathoms.

Distribution.—Ægean Sea, 0-95 fathoms (Forbes); Atlantic also (Jeffreys, Rep. Brit. Assoc.). Fossil in the Pliocene of Calabria.

Jeffreys in the reference above cited states that this species "appears to be a younger state of *A. pusillus*, having the striæ rubbed down, but showing traces of the puncture-like markings" in his manuscripts, however, he has given it specific rank, noting "see *Tornatella depressa*, Libassi." I do not think that the fragment from the Azores recorded by Dr. Watson (Challenger Report, Gastropoda, p. 627) really belongs to this species; it is thinner, and hardly shows any trace of a fold on the columella wall, which latter is straighter. May it be *A. Azoricus*, Locard?

ACTEON MONTEROSATOI, Dautzenberg.

Actæon Monterosatoi, Dautzenberg: Camp. Scient. Albert I^{er}, fasc. i, p. 20, pl. i, figs. 2a-2d; Pilsbry, Man. Conch., vol. xv, p. 155, pl. xix, figs. 1-3; Locard, Expéd. Scient. Trav. Talisman, vol. i, p. 84.

“Poreupine” Expedition, 1870, Adventure Bank, 92 fathoms.

Distribution.—Azores, 1287 metres (Dautzenberg); several localities off Spain, Portugal, and Morocco, in 322-1960 metres (Locard); Tripoli, 40-120 fathoms.

ACTEON PUSILLUS (Forbes).

Tornatella pusilla, Forbes: Rep. Brit. Assoc., 1843 (1844), p. 191.

Actæon pusillus, Forbes: Jeffreys, Ann. Nat. Hist., ser. iv, vol. vi, p. 84; ser. v, vol. x, p. 34; Dall, Bull. Mus. Harvard, vol. xviii, p. 39; Sturany, Denk. Ak. Wien, vol. lxxiii, p. 14, pl. i, fig. 13; Locard, Expéd. Scient. Trav. Talisman, vol. i, p. 82, pl. iii, figs. 4-7.

Actæon pupillus, Forbes: Monterosato, Journ. de Conchyl., vol. xxvi (1878), p. 160.

“Poreupine” Expedition, 1870, Stations 24, 26, 27, 30, 36, 50; Adventure Bank, 92 fathoms; Benzert Road, 40-65 fathoms.

Distribution.—Various localities in the Mediterranean, from 10-300 fathoms; also Madeira and Cape Verds; off the south of Portugal, 1205 metres (Locard); off Havana in 450 fathoms, and Sand Key in 111 fathoms (Dall); Sombrero I. in 450 fathoms (Watson). Fossil in the Pliocene of South Europe.

Jeffreys gives the following notes on the animal of a specimen from Station 26: “Body white; mantle folded back on the front of the shell; head hood-like, bilobed, with broad, pointed corners; tentacles large and thick, triangular; eyes black, subcutaneous, placed in front at some distance apart; auricles in front, triangular, or bluntly rounded behind; verge falcate, short. Animal like that of *Bulla*. It crawls with considerable rapidity. The edges of the head and foot in front are parallel or symmetrical, the former overlying the latter.”

ACTEON TORNATILIS (Linn.).

Bulla tornatilis, Linné: Syst. Nat., 10th ed., p. 728 (cf. Hanley, Ipsa Linn. Conch., p. 212).

Actæon tornatilis, Linné: Pilsbry, Man. Conch., vol. xv, p. 152.

“Porcupine” Expedition, 1869, Lough Swilly; 1870, Station 50; Adventure Bank, 92 fathoms (with vars. *minor*, *Monts.*, and *subulata*, S. Wood); Gulf of Tunis, 25-85 fathoms.

Distribution.—Lofoten and Iceland to the Ægean, from the shoreline to 100 fathoms. Fossil in the Miocene and Pliocene of Europe.

Several other station numbers appear on the boxes in the British Museum, but though I have strong suspicions as to which cruise they relate, I think it safer to leave them unrecorded. I suspect that the *Voluta luteofasciata* of Muhlfeldt is a synonym.

RETUSA, Brown.

The name *Retusa* was proposed by Brown in the scarce first edition of his Ill. Conch. Gt. Brit., published in 1827, for *Bulla obtusa*, Mont., and two new species, *plicata* and *discors*; he gave no diagnosis, but the forms were figured. In the first edition of his "Conchologist's Textbook" the only example is *R. plicata*. Save for the protoconch, which may or may not be a generic character, this appears to agree with *Tornatina*, Adams.

RETUSA EXCAVATA (Jeffreys). Pl. III, Figs. 7, 7a.

Utriculus excavatus, Jeffreys: Rep. Brit. Assoc., 1880 (1881), p. 387 [nom. nud.]; Pilsbry, Man. Conch., vol. xv, p. 214.

"Porcupine" Expedition, 1870, Stations 9, 14, 17.

Distribution.—Bay of Biscay (Jeffreys). Pliocene of Ficarazzi (Jeffreys).

I propose to fix a 'type' from amongst the specimens in the British Museum of this species, and from an examination of it the following notes are compiled. Shell forming an oblong cylinder, slightly inflated in the middle, opaque and fairly glossy, marked by slight lines of growth; spire almost flat, the whorls being angular and shouldered at the top, and separated by a deep suture; the apical whorl is large, shining, and globular; mouth narrow above and expanded below, not reaching to the top of the whorl; inner lip fairly well marked and continuous with the outer lip above, reflected over the pillar, leaving a slight indication of an umbilical chink. Alt. 2.5, diam. max. 1.2 mm.

RETUSA LACTEA (Jeffreys). Pl. III, Fig. 4.

Utriculus lacteus, Jeffreys: Ann. Nat. Hist., ser. iv, vol. xix, p. 334.

Retusa lactea, Jeffreys: Pilsbry, Man. Conch., vol. xv, p. 213.

"Porcupine" Expedition, 1869, Station 20.

Distribution.—"Valorous" Expedition, Station 12, 1450 fathoms.

The specimen figured is that from the "Porcupine" Expedition referred to by Jeffreys; it is, as he states, broken.

RETUSA MAMILLATA (Phil.).

Bulla mamillata, Philippi: Enum. Moll. Sicil., vol. i, p. 122, pl. vii, fig. 20.

Retusa mamillata, Philippi: Pilsbry, Man. Conch., vol. xv, p. 206.

"Porcupine" Expedition, 1870, Station 50; Vigo Bay; Adventure Bank, 92 fathoms.

Distribution.—Atlantic from Norway to the Canaries; Mediterranean and Adriatic Seas (Pilsbry). Miocene and Pliocene of Europe.

RETUSA MARSHALLI, n.sp. Pl. III, Figs. 5, 6, 6a, 6b.

Shell ovate, white, thin, smooth save for very fine lines of growth. Protoconch large, sinistral, and set at an angle to the shell. Spire flat, being slightly concave, with a deep, channelled suture. Whorls 4.

Month as long as the last whorl, which latter is slightly inflated, columella slightly twisted and reflexed, forming a fold, with a slight 'chink' in the umbilical region. Alt. 2, diam. max. 1.1 mm.

"Porcupine" Expedition, 1870, Station 17.

The species is noteworthy for its depressed and channelled spire; one specimen, broken, is considerably larger than the type. Compared with *R. obesa* (Jeffreys) from equally deep water off Spain and Morocco, the present form may be distinguished by its narrower body-whorl.

RETUSA (CYLICHNINA) NITIDULA (Lovén).

Cylichna nitidula, Lovén: Ind. Moll. Skand., p. 10; Öfv. Kon. Vet. Ak. Förh., vol. iii (1846), p. 142.

Utriculus nitidulus, Lovén: Sars, Moll. Reg. Arct. Norveg., p. 286, pl. xvii, fig. 13; pl. xxvi, fig. 3.

Retusa nitidula, Lovén: Pilsbry, Man. Conch., vol. xv, p. 212.

"Porcupine" Expedition, 1869, Dingle Bay, 18 (live), 18a (live); 1870, Stations 2, 9, 17, 35, 50, 53, 56; Vigo Bay; Adventure Bank, 92 fathoms.

Distribution.—Norway and Sweden, and the Atlantic coast of Europe, south to the Mediterranean; Madeira (Watson). Pliocene of Sicily, Calabria, and Fiecarazzi; Post-Pliocene of Belfast and Christiania.

It has been recorded from the American coasts by Miss Bush (Rep. Comm. Fisheries, 1883, p. 714) amongst the molluscs dredged by the "Fish-Hawk" in 155–487 fathoms. Jeffreys notes that this is not *Bulla nitidula* of Dillwyn from Solander's MS., and that the figures of the present species and of *R. umbilicata* on plate xcii of the "British Conchology" have accidentally had the numbers transposed.

RETUSA OBTUSA (Montagu).

Bulla obtusa, Montagu: Test. Brit., vol. i, p. 223, pl. vii, fig. 3.

Retusa obtusa, Montagu: Pilsbry, Man. Conch., vol. xv, p. 214.

"Porcupine" Expedition, 1870, Stations 24, 50; Adventure Bank, 92 fathoms.

Distribution.—European seas from Godhavn, Greenland, to the Mediterranean (Pilsbry). Pliocene of Europe.

Some of the specimens from "Adventure Bank" belong to the form *lajonkairieana*, which name Mr. Pilsbry states, in his very careful notes, must give place to that of *turrita*, Möller.

RETUSA TORNATA (Watson).

Utriculus tornatus, Watson: Journ. Linn. Soc., Zool., vol. xvii, p. 335; Challenger Rep., Gastropoda, p. 651, pl. xlvi, fig. 10.

Retusa tornata, Watson: Pilsbry, Man. Conch., vol. xv, p. 209.

"Porcupine" Expedition, 1870, Vigo Bay; Adventure Bank, 92 fathoms.

Distribution.—Madeira, dredged (Watson); Tenerife, 78 fathoms (Watson).

RETUSA TRUNCATULA (Brug.).

Bulla truncatula, Bruguière : Ency. Méth., vol. vi (1792), p. 377.

Retusa truncatula, Bruguière : Pilsbry, Man. Conch., vol. xv, p. 205.

"Porcupine" Expedition, 1870, Station 35; Adventure Bank, 92 fathoms.

Distribution.—Coast of Norway to the Canaries; Mediterranean and Adriatic Seas (Pilsbry). Miocene and Pliocene of Europe.

One form, from the Adventure Bank, is smaller, more uniformly cylindrical, more slightly sculptured and thinner, exhibiting the diaphanous bands more than usual; this is the *Bulla semisulcata* of Philippi (J. T. Marshall).

RETUSA (CYLICHNINA) UMBILICATA (Montagu).

Bulla umbilicata, Montagu : Test. Brit., vol. i, p. 222, pl. vii, fig. 4.

Retusa umbilicata, Montagu : Pilsbry, Man. Conch., vol. xv, p. 210.

Cylichna umbilicata, Montagu : Locard, Expéd. Scient. Trav. Talisman, vol. i, p. 66.

"Porcupine" Expedition, 1870, Stations 35 (with var. *strigella*, Lov.), 50, 53 (with var. *strigella*, Lov.); Vigo Bay; Benzert Road, 40-65 fathoms; Adventure Bank, 92 fathoms.

Distribution.—Lofoten Islands and Norway, south to West Africa, and in the Mediterranean, etc. (for details see Locard, l.c.). Fossil in Tertiary of South Europe and Post-Tertiary of Norway.

VOLVULA, A. Adams.

If this name be considered to clash with *Volvulus*, Oken, then *Volvulella*, Newton, may be used. *Rhizorus*, Montfort, has been referred here, but cannot be the same, as that author states "sommet enfoncé, ombiliqué," and figures a shell well open at the apex.

VOLVULA ACUMINATA (Brug.).

Bulla acuminata, Bruguière : Ency. Méth., vol. i, p. 376.

Volvula acuminata, Bruguière : Pilsbry, Man. Conch., vol. xv, p. 235.

"Porcupine" Expedition, 1870, Stations 24, 50, 56; Vigo Bay; Adventure Bank, 92 fathoms.

Distribution.—Atlantic from Norway to the Gulf of Gascony and the Mediterranean; Gulf of Suez (Cooke). Fossil in the European Tertiary.

One box in the Museum, labelled "2, 18, 18b," contains several live as well as dead specimens. There is nothing to show in which cruise they were obtained, but it may be noted that there is no Station 18b in either cruise, and no Station 18 in that of 1870.

If the suggestion made by Mr. Pilsbry as to the possible identity of this species with *V. oxytata*, Bush, and *V. persimilis*, Mörch, is well founded, then the range is extended to the eastern coast of North America.

The present form is not the *Bulla acuminata*, Sby., of the "Mineral Conchology," which equals *Bulla Sowerbyi*, Nyst, and this, again, must not be confused with the *Cylindrobulla Sowerbiei* (Montr.).

SCAPHANDER, Montfort, 1810.

SCAPHANDER LIGNARIUS (Linn.).

Bulla lignaria, Linn. : Syst. Nat., 10th ed., p. 727.

Scaphander lignarius, Linn. : Pilsbry, Man. Conch., vol. xv, p. 245.

"Porcupine" Expedition, 1869, Stations 9, 17 (live), 28 (live), 33; 1870, Stations 24, 26, 30, 50; Vigo Bay; Tunis, 25-85 fathoms; Adventure Bank, 92 fathoms.

Distribution—Atlantic Ocean from Norway to Gibraltar; Mediterranean Sea (Pilsbry). Fossil in the European Tertiary.

Several other station numbers appear on the boxes in the Museum, but I do not feel able to trust them.

Jeffreys notes "a remarkable variety occurred in my Shetland dredgings. It is very short, and unusually expanded and gibbous."

SCAPHANDER PUNCTOSTRIATUS (Mighels).

Bulla punctostriata, Mighels : Proc. Boston Soc., vol. i (1841), p. 49.

Scaphander punctostriatus, Mighels : Pilsbry, Man. Conch., vol. xv, p. 246; Locard, Expéd. Scient. Trav. Talisman, vol. i, p. 45; Dautzenberg & Fischer, Mém. Soc. Zool. France, vol. ix, p. 401; vol. x, p. 143.

"Porcupine" Expedition, 1869, Stations 16, 22 (fragments), 23, 23a, 28, 30, 39, 41, 65 (live); 1870, 1 (live), 3, 9, 16, 17, 17a.

Distribution.—From Spitzbergen to the Mediterranean, and off the Azores; on the American coast from Davis Strait to the West Indies; always in fairly deep water. Fossil in the Pliocene of Sicily.

The specimens from Stations 16, 17, 17a of the 1870 cruise appear to belong to Dall's variety *clavus*; see also Dautzenberg & Fischer (l.c.).

Jeffreys notes that one of the specimens from Station 1 had the "body orange-colour."

ATYS, Montfort.

ATYS (ALICULA) DIAPHANA (Aradas).

Bulla diaphana, Aradas : Cat. Rag., 1840, p. 40.

Atys diaphana, Pilsbry : Man. Conch., vol. xv, p. 278.

"Porcupine" Expedition, 1870, Station 50; Adventure Bank, 92 fathoms.

Distribution.—Widely scattered over the Mediterranean. Fossil in the Pliocene of Sicily.

I have followed the traditional identification, though Jeffreys notes "Weinkauff states in the Bull. Mal. Ital. for 1870 at p. 91, on the authority of Benoit, that the *Bulla diaphana* of Aradas could not be identified, and that the type specimen had been lost."

ATYS (ROXANIA) UTRICULUS (Brocchi).

Bulla utriculus, Brocchi : Conch. Foss. Subap., vol. i, p. 633, pl. i, fig. 6.

Atys utriculus, Brocchi : Pilsbry, Man. Conch., vol. xv, p. 279.

"Porcupine" Expedition, 1869, Station 18; 1870, Stations 11, 17a, 50; Adventure Bank, 92 fathoms; Benzert Road, 40-65 fathoms; off Cape Sagres, 45-58 fathoms.

Distribution.—Finmark to the Mediterranean and Canary Islands. Fossil in the European Tertiary.

The Mediterranean specimens usually belong to the var. *oblonga*, Jeff. Several other station numbers appear in the collection.

CYLICHNA, Lovén.

Our knowledge of the various forms referred to this group is very scanty. If *Cylichna* be objected to on the ground of the prior *Cylichnus*, Burmeister, then *Muestia*, A. Adams, may be used.

In addition to the forms catalogued, there is a single worn dead shell from Station 65, of the 1869 cruise, resembling a very large *C. Hoernesii*, and not being so swollen as *C. orata*.

CYLICHNA ALBA (Brown).

Volvaria alba, Brown: Ill. Conch. Gt. Brit., 1827, pl. xxxviii, figs. 43, 44.

Cylichna alba, Brown: Pilsbry, Man. Conch., vol. xv, p. 290; Friele and Grieg, Norske Nordhavs-Exped., Mollusca, pt. iii, p. 108.

"Porcupine Expedition," 1869, Stations 19*a* (live), 23*a*, 31, 47, 61; 1870, Stations 9, 16, 17, 17*a*, 29.

Distribution.—Circumpolar, down to the Azores, Pernambuco, and California; for details see Friele & Grieg (l.c.). Recently recorded from Spitzbergen (Knipowitsch). Fossil in Europe and North America.

The following notes are by Mr. J. T. Marshall:—

"Gwyn Jeffreys (Ann. Nat. Hist., ser. iv, vol. xix, p. 333) cites this species from the Porcupine Expedition of 1870 from the 'Bay of Biscay, 795–944 f.,' but there was no dredging at the first-named depth, and the latter depth was off the coast of Portugal. Again, he writes (Ann. Nat. Hist., ser. iv, vol. xx, p. 237) that in the Expedition of 1870 'a closely allied species, if more than a variety, came from depths of 227 f. and 539 f. in the Bay of Biscay.' The former depth, however, occurred at Station 29, off Cadiz, and the latter was at Station 9, on the slope of the English Channel. All through the 'Valorous Report' he has cited 'Bay of Biscay' to many dredgings that were obtained hundreds of miles away, as in the above instances. As a matter of fact, the 'Porcupine' did not dredge at all in the Bay of Biscay. (See Carpenter & Jeffreys, Proc. Roy. Soc., vol. xix, p. 154.)"

CYLICHNA CYLINDRACEA (Pennant).

Bulla cylindracea, Pennant: Brit. Zool., vol. iv (1777), p. 47, pl. lxx, fig. 85.

Cylichna cylindracea, Pennant: Pilsbry, Man. Conch., vol. xv, p. 289.

"Porcupine" Expedition, 1869, Stations 67 (live), 68 (live), off Lerwick, 10–66 fathoms; 1870, Stations 2, 3 (var. *linearis*), 4, 9 (live), 18 (live), 35, 50, 56; Vigo Bay; Benzert Road, 40–65 fathoms; Adventure Bank, 92 fathoms.

Distribution.—European seas from Norway to the Azores, Canaries, and Madeira; Mediterranean; Whydah, W. Africa; St. Helena;

Ascension; Tristan da Cunha; Bombay. Later Tertiaries of Europe; also in the Clyde Beds and Quaternary of Bohuslan (Jeffreys).

The following station numbers, apparently relating to the 1870 cruise, are also noted on the boxes in the Museum: 1, 6, 11, 14, 15, 23. Two dead specimens from Station 17 of the 1870 cruise are referred here with doubt; they are more slender and may be distinct, but are in too bad condition for description.

I have examined two specimens from Bombay, presented by Mr. Abererombie to the Museum; they are in poor condition, but I am unable to detect any salient characters to separate them from the present species.

CYLICHNA DISCUS, Watson.

Cylichna discus, Watson: Journ. Linn. Soc., Zool., vol. xvii, p. 319; Challenger Rep., Gastropoda, p. 664, pl. xlix, fig. 10; Friele & Grieg, Norske Nordhavs-Exped., Moll., pt. iii, p. 109.

“Poreupine” Expedition, 1870, Stations 16, 17a.

Distribution.—Culebra I. (Watson); Norwegian North Atlantic Expedition, several stations at 412–1163 fathoms; “Michael Sars” Expedition to Jan Mayen in 1100 fathoms (Friele).

Friele & Grieg state that “the specimens from smaller depths, such as at Stations 18, 31, and 87, bore a strong resemblance to *C. alba*,” and I suspect that the two may prove to be varying forms of one species. Jeffreys, however, notes: “Intermediate between *C. cylindracea* and *C. alba*, broader than the former and narrower than the latter. Sculpture peculiar to this genus indistinct and scarcely visible. The truncated apex has a coating so slight that there is nearly always a small pore or opening, which is sometimes enlarged by attrition so as to expose the concealed spire.” I have found great difficulty in separating the forms, and one specimen from Station 23a of the 1869 cruise, included by Jeffreys in a series of *C. alba*, may belong here.

CYLICHNA (?) ELONGATA (Jeffreys). Pl. III, Figs. 8, 8a.

Bullina elongata, Jeffreys: Rep. Brit. Assoc., 1880 (1881), p. 387; Ann. Nat. Hist., ser. v, vol. vi, p. 318; Pilsbry, Man. Conch., vol. xv, p. 394.

“Poreupine” Expedition, 1870, Stations 16, 17, 17a.

Jeffreys suggests, and from an examination of the figure given I think it may well be so, that this is the *Bullina undata*, Della Chiaje, of Seguenza (Mem. Acc. Lincei, ser. III, vol. vi, p. 251, pl. xvi, fig. 9).

CYLICHNA HOERNESI (Weinkauff). Pl. III, Fig. 1.

Bulla Hoernesii, Weinkauff: Journ. de Conchyl., vol. xiv, p. 238; Conch. des Mittelmeeres, vol. ii, p. 187.

Cylichna cuneata, Tiberi: Journ. de Conchyl., vol. xvi, p. 180.

Bulla conulus, Hoernes *nee* Deshayes.

“Poreupine” Expedition, 1870, Stations Vigo Bay, off Cape Sagres, 35, 50, 52, 56, Adventure Bank.

Distribution.—Bay of Naples (Tiberi); Palermo and St. Vito (Monterosato). Tertiary of Europe.

Lest there be any mistake in the form discussed, it is now figured (Pl. III, Fig. 3). Authors in general have referred this form to the briefly diagnosed and unfigured *Bulla striatula* of Forbes. Fortunately, guided by a note of Jeffreys, I have succeeded in finding a specimen presented by Forbes himself to the British Museum. Jeffreys notes that *Bulla striatula* is probably a synonym of *Retusa mamillata* (Phil.); this may be so, but in the single specimen, which is in very bad condition, the protoconch appears rather to be sunk. Next, there has been a difficulty as to whether *C. Hoernesii* be not the same as the *Bulla pyramidata* of A. Adams from China seas; the type of the latter is in the British Museum, and the two species are very closely related, but *C. pyramidata* is a trifle more pyramidal, i.e. the relative proportions taken near the base and apex are different, and the last whorl is slightly more inflated. Further material of the latter species is needed.

CYLICHNA JEFFREYSI (Weinkauff).

Bulla (*Cylichna*) *Jeffreysi*, Weinkauff: Journ. de Conchyl., vol. xiv, p. 238; Conch. des Mittelmeeres, vol. ii, p. 199.

Bulla ovulata, Jeffreys: Ann. Nat. Hist., ser. II, vol. xvii, p. 188, pl. ii, figs. 18, 19 [*nec* Brocchi].

“Porcupine” Expedition, 1870, Stations Benzert Road; Adventure Bank; Gulf of Tunis.

Distribution.—Various localities in the Mediterranean. Pliocene of South Europe.

CYLICHNA OBSCURA, n.sp. Pl. III, Figs. 9, 9a.

Shell cylindrically ovate, thin, shining, smooth, with faint traces of lines of growth; aperture narrow above, wide below; columella rather straight, but slightly inclined to the left, and a little thickened, leaving a small umbilical chink visible. Apex deeply sunk, with a narrow, funnel-shaped, obtusely edged umbilicus. Alt. 2·5, diam. max. 1·2 mm.

“Porcupine” Expedition, 1870, Station 3.

Only two specimens, one dead and one live. It appears to be akin to *C. obesiucula*, Bruguière, but is more slender and the columella is straighter. Also related to *C. ovata*, Jeff., but that shell is somewhat pyramidal in shape, whilst this is rather Bulloid.

CYLICHNA OVATA, Jeffreys.

Cylichna ovata, Jeffreys: Proc. Roy. Soc., vol. xix, p. 156; Rep. Brit. Assoc., 1880, p. 387; Ann. Nat. Hist., ser. v, vol. x, p. 34; Watson, Challenger Rep., Gastropoda, p. 664, pl. xlix, fig. 9; Dautzenberg, Camp. Scient. Albert 1^{er}, fasc. i, p. 23; Dautzenberg & Fischer, Mém. Soc. Zool. France, vol. ix, p. 403; Locard, Expéd. Scient. Trav. Talisman, vol. i, p. 69; Smith, Ann. Nat. Hist., ser. vi, vol. iv, p. 422.

Retusa (?) *ovata*, Jeffreys: Dall, Bull. Mus. Comp. Zool., vol. xviii, p. 49.

Retusa ovata, Jeffreys: Pilsbry, Man. Conch., vol. xv, p. 232.

“Poreupine” Expedition, 1869, Stations 23, 36, 42; 1870, Stations 16, 17, 17a; off Cape Espichel.

Distribution.—Widely scattered over the North Atlantic from Norway to the Azores, etc., and on the eastern coast of North America to the West Indies and Pernambuco; also in the Mediterranean. Fossil in the Pliocene of South Europe.

CYLICHA (?) PARVULA, Jeffreys.

Cylicha parvula, Jeffreys: Ann. Nat. Hist., ser. v, vol. xi, p. 400, pl. xvi, fig. 9.

“Poreupine” Expedition, 1870, Station 13.

Distribution.—Bay of Biscay, 1192 fathoms (Jeffreys).

The specimens are, apparently, live shells, but very young.

CYLICHA PROPINQUA (Sars).

Bulla propinqua, M. Sars, in G. O. Sars: Moll. Reg. Arct. Norveg., p. 284.

I record this name as there are two specimens, so identified by Jeffreys, from the 1869 cruise, in a box labelled “65, 345 f. and 74, 75, 200–25 f.” Jeffreys does not mention in his list Stations 74 or 75, and probably they really came from Station 65, where the depth given would be correct. As to the proper name for this form, see Pilsbry (Man. Conch., vol. xv, p. 292), and Friele & Grieg (Norske Nordhavs-Exped., pt. iii, p. 109).

DIAPHANA, Brown.

This generic name was proposed by Brown in 1827 (Ill. Conch. Gt. Brit., 1827, explanation of pl. xxxviii) for *D. minuta*, *pellucida*, *candida*, n.spp.; in 1833, in the first edition of his “Conchologist’s Textbook” (p. 98), the only example he gives of the genus is *D. candida*, which may therefore be treated as the type.

With reference to the question mentioned by Mr. Pilsbry (Man. Conch., vol. xv, p. 280), I may say that I have seen several editions of Brown’s “Textbook,” including the first, and they appear to be identical, though I have not collated them line by line. One copy bears the appellation “fourth edition” on the cardboard cover and “fifth edition” on the title-page.

Two broken specimens of a species were found at Station 17, of the 1870 cruise, which are in too bad condition for description. Mr. Marshall notes “Near *U. ventrosus* [*D. ventricosus*], but different crown and pillar.” There is also a single, apparently immature, specimen from Station 56, of the 1870 cruise, as to which Mr. Marshall notes “Like *U. expansus*, but has an umbilicus and a different crown.”

DIAPHANA EXPANSA (Jeffreys).

Amphisphyra expansa, Jeffreys: Rep. Brit. Assoc., 1864 (1865), p. 330; Locard, Expéd. Scient. Trav. Talisman, vol. i, p. 77.

Diaphana expansa, Jeffreys: Pilsbry, Man. Conch., vol. xv, p. 284.

Amphisphyra quadrata, Monterosato: Journ. de Conchyl., vol. xxii (1874), p. 280.

"Porcupine" Expedition, 1869, Stations 11 (live), 12, 47; 1870, Station 3.

Distribution.—Greenland (Torell); Norway (Sars, etc.); British Isles and Shetlands (Jeffreys, etc.); Gulf of Gascony, 677 metres (Locard); Sicily (Monterosato). Quaternary of Sicily (Locard).

I give *D. quadrata* as a synonym, on the authority of Mr. J. T. Marshall.

DIAPHANA CANDIDA, BROWN.

Diaphana candida, Brown: Ill. Conch. Gt. Brit., 1827, pl. xxxviii, figs. 13, 14.

Diaphana minuta, Brown: Pilsbry, Man. Conch., vol. xv, p. 282.

Bulla hyalina, Turton *nec* Gmelin.

"Porcupine" Expedition, 1869, Station 18 (live).

Distribution.—"From Spitzbergen (Torell) to the Egyptian coast of the Mediterranean (Schneider); Madeira and the Canaries (McAndrew); Davis Strait to Cape Cod. One of the glacial fossils of Scotland and Scandinavia" (Jeffreys).

DIAPHANA SEGUENZÆ (Watson).

Amphisphyra Seguenzæ, Watson: Challenger Rep., Gastropoda, p. 646, pl. xlvi, fig. 5.

Diaphana Seguenzæ, Watson: Pilsbry, Man. Conch., vol. xv, p. 282.

"Porcupine" Expedition, 1870, Stations 16, 17, 17a.

Distribution.—West of the Azores, 1000 fathoms (Watson). Pliocene of Calabria.

BULLA, Linn.

BULLA PINGUICULA, Jeffreys.

Bulla subrotunda, Jeffreys: Rep. Brit. Assoc., 1873 (1874), p. 113 (nom. nud.).

Bulla pinguicula, Jeffreys: Ann. Nat. Hist., ser. v, vol. vi (1880), p. 318 (nom. nud.); Rep. Brit. Assoc., 1880 (1881), p. 387 (nom. nud.); Seguenza, Mem. Acc. Lincei, ser. III, vol. vi (1879), p. 250, pl. xvi, fig. 7; Watson, Challenger Rep., Gastropoda, p. 638.

Bulla abyssicola, Dall: Bull. Mus. Comp. Zool., vol. ix (1881), p. 97; vol. xviii, p. 56, pl. xvii, fig. 11.

Bulla Guernei, Dautzenberg: Camp. Scient. Albert I^{er}, fasc. i (1889), p. 24, pl. i, fig. 5.

"Porcupine" Expedition, 1870, Stations 3, 22, off Cape Espichel, 30, 56, off Jijeli.

Distribution.—Deep water off Spain, Portugal, the Azores, etc.; Mediterranean, off Palermo; Yucatan Strait; Santa Cruz.

In his manuscripts, Jeffreys unites *subrotunda* and *pinguicula*, neither of which he ever described, and I use the latter name on account of Seguenza's paper. Dr. Dall stated that his *abyssicola* and Jeffreys' *pinguicula* were the same thing. The Marquis de Monterosato in 1890 placed the four named forms together. Recently, however, Mons. Locard (Expéd. Scient. Trav. Talisman, vol. i, pp. 58-62), while agreeing that *Guernei* and *subrotunda*—which he calls *subrotundata*—are identical, has given separate specific rank to *pinguicula* and *abyssicola*, a course in which I cannot follow him.

BULLA SEMILEVIS (Jeffreys), Seguenza.

Bulla semilavis, Jeffreys: Seguenza, Mem. Ac. Lincei, ser. III, vol. vi (1879), p. 251, pl. xvi, fig. 5; Pilsbry, Man. Conch., vol. xv, p. 337; Locard, Expéd. Scient. Trav. Talisman, vol. i, p. 57.

Bulla semilevis, Jeffreys: Rep. Brit. Assoc., 1880 (1881), p. 387.

“Porcupine” Expedition, Stations 16, 17, 17a.

Distribution.—From the south-west of Ireland and the Bay of Biscay, to Marseilles and the Azores, always in very deep water. Fossil in the Pliocene of Calabria.

AKERA, Müller.

AKERA BULLATA, Müller.

Akera bullata, Müller: Zool. Danica, p. 242, pl. lxxi, fig. 1; Pilsbry, Man. Conch., vol. xv, p. 377.

“Porcupine” Expedition, 1869, Station 18 (live).

Distribution.—From Finmark to the Mediterranean.

One young specimen only.

EXPLANATION OF PLATE III.

- FIG. 1. *Cylichna Hoernesii* (Weinkauff).
 ,, 2. *Acteon globulinus* (Forbes).
 ,, 3. *Bulla striatula*, Forbes.
 ,, 4. *Retusa lactea* (Jeffreys).
 ,, 5, 6, 6a, 6b. *Retusa Marshalli*, n.sp.
 ,, 7, 7a. *Retusa excavata* (Jeffreys).
 ,, 8, 8a. *Cylichna* (?) *clongata* (Jeffreys).
 ,, 9, 9a. ,, *obscura*, n.sp.

Specimens represented in Figs. 2, 5, 6, 9 are in coll. Sykes; others in the British Museum.